MicroVAX Diagnostic Monitor Release Notes

Order Number AA–GO3AZ–TN

These release notes describe restrictions, undocumented features, and other essential information about the MicroVAX Diagnostic Monitor (MDM) Version 4.6, Release 135. These release notes supersede all other MDM documentation.

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Preface

These release notes describe update information, enhancements, new features, and bug fixes for the MicroVAX Diagnostic Monitor (MDM) Version 4.6, Release 135 as they apply to all MDM users.

Intended Audience

These release notes are intended for the following people:

- System managers who are installing MDM
- Individuals responsible for maintaining MicroVAX systems
- Diagnostic developers

Document Structure

These notes are organized as follows:

- Chapter 1 lists updates.
- Chapter 2 lists enhancements and new features.
- Chapter 3 lists problems and corrections.

Associated Documents

The following MDM documents are available:

- *MDM Programmer's Guide*
- *MDM Development Kit Installation Guide*
- *MDM User's Guide*
- *MDM Ethernet Server User's Guide*
- *MDM Hard Disk User's Guide*
- *MDM Reference Card*

- *MDM Customer CDROM Booklet*
- *MDM Maintenance CDROM Booklet*

Chapter 1
Updates

This chapter updates information necessary to run the MicroVAX Diagnostic Monitor (MDM).

1.1 General MDM Updates

This section updates hardware and installation requirements.

1.1.1 2M-Byte System Support Restriction

MDM Release 135 requires a minimum of 2 megabytes of memory. The monitor uses approximately 1.5 megabytes. If the memory requirements exceed the available memory, MDM does not run.

1.1.2 Operating Environment

Users of the MDM Development Kit must install VAXELN 4.0 for use with MDM Version 4.6, Release 135.

1.1.3 Remote Console

MDM remote console can only be run on one target system at a time from a particular host account. When a second remote session is initiated from the same account, either an exception occurs on one of the target systems or neither target system runs MDM correctly.

1.1.4 Booting MDM on the VAX 4000

You can boot MDM on the VAX 4000 from either the Second Generation Ethernet Controller (SGEC) (see Section 1.1.4.1) or from the Single Host Adapter Chip (SHAC) (see Section 1.1.4.2). You can also boot MDM from TK50, TF85, KRQ50, CDROM (RRD4x), and over the network through the DEQNA, DELQA, and DESQA.

1.1.4.1 Booting from the SGEC on the VAX 4000

You can boot MDM over a network by means of the Second Generation Ethernet Controller (SGEC) with the H3604 cover panel. You must first install the MDM Ethernet Maintenance Kit and use the NA18AS.SYS bootable image.

The command is as follows:

```
>>> BOOT EZA0
```

1.1.4.2 Booting from the SHAC on the VAX 4000

You can boot MDM from an RF drive connected to the VAX 4000 Single Host Adapter Chip (SHAC). You must first install the MDM Hard Disk Kit on device DIA0: and use the MDMSHA.SYS bootable image.

The command is as follows:

```
>>> BOOT/100 DIAn
```

where *n* is the boot number of the SHAC drive.

Supply [SYS0.SYSEXE]MDMSHA.SYS when the system requests the boot file name, as in the following example:

```
Bootfile:  [SYS0.SYSEXE]MDMSHA.SYS
```

1.1.4.3 Booting from the DEQNA, DELQA, and DESQA on the VAX 4000 Model 200 and VAX 4000 Model 300 Processors

The MDM kits that support the DEQNA, DELQA, and DESQA bootable images are distributed as part of the Ethernet Server Kit. The bootable images are NA06AS.SYS and NA07AS.SYS. NA07AS.SYS is for testing the load device. The boot command is as follows:

```
>>> BOOT XQA0
```

1.1.4.4 Booting from the TK50 on the VAX 4000 Model 200 and VAX 4000 Model 300 Processors

The existing MDM TK50 Maintenance Kit supports booting MDM from TK50. The boot command is as follows:

```
>>> BOOT MUA0
```

1.1.4.5 Booting from the KRQ50 Controller on the VAX 4000 Model 200 and VAX 4000 Model 300 Processors

To boot MDM from the KRQ50 controller, refer to the *MicroVAX Diagnostic Monitor Maintenance CDROM Booklet* for instructions on the handling and setup procedures for your system. The boot command is as follows:

```
>>> BOOT/100 DUxn
2...
Bootfile:  [SYS0.SYSEXE]MDMCD.SYS
```

where *x* is the drive controller port letter

and *n* is the drive controller unit number.

1.1.5 Booting MDM on the DECsystem 5500

You may boot MDM from the network through the SGEC (see Section 1.1.5.1), the DEQNA, DESQA, and DELQA (see Section 1.1.5.2), and from a CDROM (see Section 1.1.5.3).

1.1.5.1 Booting from the SGEC on the DECsystem 5500

The MDM kit that supports the SGEC bootable images is distributed as part of the Ethernet Server Kit. You must first install the MDM Ethernet Maintenance Kit and then use the NAU07AS.SYS bootable image.

The boot command is as follows:

```
>>> BOOT EZA0
```

1.1.5.2 Booting from the DEQNA, DESQA, and DELQA on the DECsystem 5500

The MDM kits that support the DEQNA, DESQA, and DELQA bootable images are distributed as part of the Ethernet Server Kit. The bootable images are NA06AS.SYS and NA07AS.SYS. NA07AS.SYS tests the load device.

The boot command is as follows:

```
>>> BOOT XQA0
```

1.1.5.3 Booting MDM from a CDROM on the DECsystem 5500

MDM supports booting from an RRD4x connected to an on-board Small Computer Systems Interface (SCSI) bus on a DECsystem 5500. A maintenance compact disc has been provided for this purpose.

The command to boot MDM from the CDROM (RRD4x) is as follows:

```
>>> BOOT/100 DIAn
```

where *n* is the boot number of the RRD4x. (Enter the SHOW SCSI command at the console prompt (>>>) to obtain the boot number.)

When the system requests the name of the bootfile, supply the name [SYS0.SYSEXE]MDMCD.SYS, as in the following example.

```
Bootfile:  [SYS0.SYSEXE]MDMCD.SYS
```

1.1.6 Device Diagnostic Support

Table 1–1 provides updates on device support.

Table 1–1: Device Diagnostic Support

Controller	Device	Revision	File Name
CPU	KA620	L	NAKAA
	KA630		
	KA640		
	KA650		
	KA655		
	KA670		
	KN210		
	KN220		
MEMORY	MS220	B	NAMSC
	MS630	J	NAMSA
	MS650	H	NAMTA
	MS670	A	NAMSB
LPV11 & LPV11SA	LP25	G	NALPA
	LP26		
	LP27		
	LG01		
	LG02		
RQDX2 & RQDX3	RX50	Q	NARXA
	RD32		
	RX33		
	RD52		
	RD53		
	RD54		
KDA50–Q & KLESI	RA60	R	NAKDA

Table 1–1 (Cont.): Device Diagnostic Support

Controller	Device	Revision	File Name
	RA70		
	RA81		
	RA82		
	RA90		
KLESI	RC25		
TQK50	TK50	J	NATKA
TQK70	TK70	J	NATKA
DEQNA	–	Q	NAXQA
DELQA	–	Q	NAXQA
DESQA	–	Q	NAXQA
DLV11	–	D	NADLA
DZQ11 & DZV11	–	G	NADZA
DRV11–WA	–	I	NADRA
DRV11–J	–	F	NADRB
DPV11	–	G	NADPA
DMV11	–	I	NADMA
KRQ50	RRD40	K	NARRA
	RRD50		
KMV11A (KMV1A)	–	G	NAKMA
KMV11B (KMV1B)	–	F	NAKMB
IEQ11	–	B	NAIEA
DHQ11		K	NADHA
CXY08	–		
CXA16	–		
CXB16	–		
CXF32	–		
DHF11	–		

Table 1–1 (Cont.): Device Diagnostic Support

Controller	Device	Revision	File Name
DHV11	–		
DFA01	–	E	NADFA
VCB01	–	F	NAVCA
KWV11–C	–	F	NAKWA
ADV11–DA	–	G	NAADA
AAV11–DA	–	H	NAAAA
AAV11–C	–	B	NAAAC
ADV11–C	–	C	NAADC
AXV11–C	–	E	NAAXA
VCB02	–	F	NAVCB
DSV11	–	H	NADSA
VSV11	VSV21–AA	G	NAVVA
	VSV21–CA		
	VSV90		
DRQ11–C	–	B	NADQA
LNV11	–	D	NALAA
LNV11–A	–	C	NALNA
KLESI	TU81	I	NATUA
	TU81E		
TSV05	TS05	L	NATSA
DRQ3B	–	F	NAQBA
IBQ01	–	C	NAIBA
IAV11–A	–	E	NAIAA
IAV11–B	–	D	NAIAB
IDV11–A	–	D	NAIDA
IDV11–B	–	G	NAIDB
IDV11–C	–	E	NAIDC

Table 1–1 (Cont.): Device Diagnostic Support

Controller	Device	Revision	File Name
IDV11–D	–	D	NAIDD
MIRA	–	G	NAMIA
KXJ11	–	H	NAKXA
ADQ32	–	F	NAAQA
KLESI	RV20	G	NARVA
DESNA	–	D	NACQA
DTC–04	–	C	NADTA
IGQ11	–	C	NAIGA
KWV11–C	–	F	NAKWA
KWV11–W	–	B	NAKWB
POLARSTAR	–	C	NAQCA
GS03–WD–DHV11	–	A	NAGSA
GS03–WD–DQZ11	–	A	NAGSB
GS03–WD–CXY08	–	A	NAGSC
LANCE	–	D	NALAN
SGEC	–	C	NASGA
DSSI	RF30	F	NADSI
	RF71		
	TF85		
SHAC	RF30	D	NASHA
	RF71		
	TF85		
VS550	–	C	NAVSA
KFQSA	RF30	I	NAKFA
	RF71		
DIV32		D	NADIA
KWV32		A	NAKWC

Table 1–1 (Cont.): Device Diagnostic Support

Controller	Device	Revision	File Name
DELIX[1]	–	D	NADXA
RQX05	–	D	NARQA
KZQSA	RRD40	D	NAKZA
	RRD42		
	TLZ04		
SCSI	RRD40	B	NASCA
	TLZ04		
	RZ22		
	RZ23		
	RZ24		
	RZ55		
	RZ56		
DTQNA	–	A	NAZQA
DWQVA	–	A	NADWQ

[1]Indicates diagnostics that are included on the media, but are not supported in the auto-configuration information. To use these diagnostics, you must use the custom configuration commands.

1.1.7 MDM System Notes and Updates

You will find a Software Performance Report (SPR) form in each kit. These SPR forms provide two functions. First, they are a means of letting the software developers know as soon as possible about problems found in the product. Second, they provide users a way to offer suggestions based on actual use of the product.

1.1.8 TK50 Load Times

Table 1–2 is a chart of TK50 and TK70 load times for MDM Releases 114 through 131. Load times, in any configuration, are not available for MDM Release 135. Load time is the length of time necessary for a system to load and configure the diagnostics for the individual devices in the system. The listed times do not include the length of time needed for the monitor to load initially (the elapsed time from the boot command to the display of the disclaimer).

Table 1–2: TK Load Times (in minutes)

Release	TK50	TK70	TK50	TK70	TK50	TK70	TK50	TK70
	(CONFIG 1)		(CONFIG 2)		(CONFIG 3)		(CONFIG 4)	
114	07:49	na*	06:50	na*	19:52	na*	09:30	na*
115	25:55	na*	39:44	na*	35:23	na*	14:21	na*
116	09:33	na*	12:21	na*	24:49	na*	12:19	na*
116A	11:21	na*	09:47	na*	25:59	na*	12:54	na*
118	10:25	na*	10:30	na*	29:46	na*	13:06	na*
120	10:12	06:55	10:11	07:01	31:02	23:21	13:15	07:55
121	07:30	04:59	06:04	05:57	17:49	15:22	07:40	05:55
122	06:18	05:08	06:22	05:07	19:04	16:28	07:48	06:03
123	07:26	05:11	06:29	05:12	19:41	16:42	09:17	06:10
124	09.36	07:00	09:17	06:50	21:55	18:52	11:08	08:18
125	10·05	07:40	10:10	07:30	22:25	21:04	12:12	08:45
126	09:47	07:09	09:42	07:03	23:25	21:11	11:20	08:30
127	09:31	07:08	09:36	07:00	24:02	21:23	11:27	08:24
128	08:03	07:21	10:11	06:20	23:29	20:26	11:07	07:38
129	09:12	06:33	08:25	05:49	23:11	19:31	na**	na**

* Load times are listed in minutes. Releases before 120 did not support TK70 drives. No comparisons can be made between those releases and releases between 120 and 132.

** As of Version 4.0, Release 129, Config 4 will not be supported.

*** As of Version 4.3, Release 132, TK50/TK70 load times in any configuration will not be made available.

Key to Configuration Devices

- Config 1 = CPU, MEM, DEQNA, RQDX2, DHV11, TK
- Config 2 = CPU, MEM, DEQNA, TK, TSV05, DMV11, KDA50, CXY08
- Config 3 = CPU, MEM, RQDX3, TK, DEQNA, DHV11, KDA50, RC25, DZV11, DZQ11, DPV11, KWV11–C
- Config 4 = CPU, MEM, DEQNA, RQDX3, TK, VCB02

Table 1–2 (Cont.): TK Load Times (in minutes)

Release	TK50	TK70	TK50	TK70	TK50	TK70	TK50	TK70
130	07:18	05:50	08:32	05:51	22:57	19:15	na**	na**
131	09:10	06:30	22:42	05:56	24:02	20:31	na**	na**
132	na***	na***	na***	na***	na***	na***	na***	na***

The difference in load times on the same system between a KA650 CPU and a MicroVAX CPU is less than 3%, even though the KA650 is 3.8 times faster than the MicroVAX 3800/3900. Thus, load times are not CPU-dependent.

1.1.9 Order Number Reference

Table 1–3 lists order numbers for current diagnostics.

Table 1–3: Order Number Reference

Part Number	Title
ZNA02–GZ	MV DIAG MDM ENET CUST DOC
ZNA02–P5	MV DIAG MDM ENET CUST TK50
ZNA02–PH	MV DIAG MDM ENET CUST RL02
ZNA02–PM	MV DIAG MDM ENET CUST 1600 bpi MT9
QX–K32AA–AA	MDM CDROM DIAGNOSTIC SINGLE USE LICENSE
QZ–K32AA–H8	MDM CDROM MAINTENANCE DIAGNOSTIC MEDIA KIT
QZ–K32AA–U8	MDM CDROM CUSTOMER KIT
QX–K32AA–A8	MDM CDROM ANNUAL DIAGNOSTIC UPDATE SERVICE
QZ–K14AA–U3	Customer Diagnostics on RX50
QZ–K14AA–U5	Customer Diagnostics on TK50
QZ–K05AA–H5	MV DIAG MDM ENET MAINT TK50
QZ–K05AA–HH	MV DIAG MDM ENET MAINT RL02
QZ–K05AA–HM	MV DIAG MDM ENET MAINT 1600 bpi MT9
QZ–K05AA–GZ	MV DIAG MDM ENET MAINT DOC
QZ–K15AA–GZ	MV DIAG DEV DOC KIT
QZ–K15AA–H5	MV DIAG DEV TK50

Table 1–3 (Cont.): Order Number Reference

Part Number	Title
QZ–K15AA–HM	MV DIAG DEV KIT 1600 bpi MT
QZ–K17AA–H5	MV DIAG ULTRIX ENET MAINT TK50
QZ–K17AA–HM	MV DIAG ULTRIX ENET MAINT 1600 bpi MT
QZ–K17AA–GZ	MV DIAG ULTRIX ENET DOC KIT
QZ–K17AA–U5	MV DIAG ULTRIX ENET CUST TK50
QZ–K17AA–UM	MV DIAG ULTRIX ENET CUST 1600 bpi MT
QZ–K18AA–U5	MV DIAG RA/RD CUST DIAG TK50
QZ–K18AA–UM	MV DIAG RA/RD CUST DIAG 1600 bpi MT
QZ–K18AA–H5	MV DIAG RA/RD MAINT DIAG TK50
QZ–K18AA–HM	MV DIAG RA/RD MAINT DIAG 1600 bpi MT
QZ–K19AA–H3	Maintenance diagnostics on RX50
QZ–K19AA–H5	Maintenance diagnostics on TK50
QZ–K19AA–GZ	Maintenance documentation

1.1.10 Automatic Distribution of Diagnostics

Each geographic area within the U.S.A. has a designated diagnostic contact. (See Table 1–4 for a list of the contacts.) Field personnel should work with their area contact for all diagnostic needs, including additions and deletions to the ADS mailing lists for all VAX, PDP–11, MicroVAX, MICRO–11, and KLAD systems, and any newly released system. They should also work with their area contact to resolve problems.

Table 1–4: Area Contacts for Diagnostic Distribution

Area	Contact	Direct	DTN	ENET Address
CSC–ATLANTA	Margaret Wilson	404–343–2511	343–2511	MARGARET WILSON@ALF
CSC–COLORADO	Don Decker	719–592–5420	592–5420	CSC32::D_DECKER
NORTH CENTRAL	Nancy Conley	313–347–5721	471–5721	NANCY CONLEY@OHF
IN–DEC	Maddy Vega	508–467–8274	262–8274	SENIOR::VEGA
MID–ATLANTIC	Rob Peterson	301–381–3139	327–3139	GRANMA::RPETERSON
NEW YORK/NEW JERSEY	Wayne Wolfrum	201–819–3954	332–3954	KYOA::WOLFRUM
NORTHEAST	Pearl Magiera	508–441–6624	288–6624	NERSW5::MAGIERA
SOUTH CENTRAL	Carolyn Duerksen	214–702–4606	483–4606	DPDMAI::DUERKSEN
SOUTH	Kathy Jenkins	404–257–2256	385–2256	ODIXIE::KJENKINS
WEST	Ann Cline	714–850–7747	533–7747	ANN CLINE@CWO
	Marion Bratton	408–496–3410	521–3410	WR2FOR::BRATTONMA
FEDERAL SYSTEMS	Rick Tomaszewski	301–306–6615	379–6615	TOMASZEWSKI@DER
GIA	Terry Munroe	613–591–4256	621–4256	KAOFS::MUNROE

1.1.11 Debugging Devices

The DEQNA, DESQA, and DELQA are the proper load devices to use in a debugging session.

1.1.12 MDM Boot Capabilities

Table 1–5 lists the MDM boot and diagnostic load capabilities for media vs system. You must order the appropriate kits.

Table 1–5: MDM Boot Capabilities

Boot Media	MicroVAX/rtVAX	DECsystem 5400/5500
RX	Yes	Not available
TK	Yes	Yes
TF	Yes	No
Network	Yes	Yes *
Hard Disk	Yes	No

* Host boot node can be on ULTRIX or VMS host, provided DECnet is installed.

1.2 MDM Diagnostic Notes and Updates

All diagnostics have been rebuilt and are incompatible with previous versions of MDM. The diagnostics are source-compatible only. The following diagnostics have been revised for Version 4.6, Release 135. The last letter indicates the revision level of the diagnostic.

- NAADCC
- NADWQA
- NAIAAE
- NAIDCE
- NAKFAI
- NAKZAD
- NARVAG
- NASHAD
- NATKAJ
- NATSAL

BLANK

Chapter 2
Enhancements and New Features

This chapter discusses enhancements and features which were added to MDM Version 4.6, Release 135.

2.1 New Network Boot Support

2.1.1 MDM Network Boot from the InfoServer 100 via CDROM

The existing Customer and Maintenance Compact Discs can now be used to boot MDM from the InfoServer 100. A "bundled" image, *MDMNET.SYS*, has been added in the existing compact discs to accomplish this. The bundled image contains the MDM CDROM bootable image and all the MDM diagnostics.

Please note that a minimum of 5 megabytes of memory is required to boot MDM from the InfoServer 100.

The following steps should be taken to downline load MDM from the InfoServer 100:

1. Load the MDM CDROM into the appropriate drive on the InfoServer 100
2. Set up the InfoServer 100 to downline load:
   - *SET SERVER STATE ON*
   - *SET SERVER MOP ENABLED*
   - For more information, refer to the *Infoserver System Operations Guide*

To boot MDM on the target system, use the solicitation boot request, *BOOT /100*, for your appropriate Ethernet device (XQA0, ESA0, or EZA0) and supply the file name *MDMNET* at the system prompt. For example:

```
>>> BOOT/100 EZA0
2...
Bootfile:  MDMNET
```

2.2 New Boot Device Support

MDM Version 4.6, Release 135, also supports booting MDM and loading and running diagnostics from the TF85 on the SHAC on the VAX 4000 Model 200 and VAX 4000 Model 300 processors. This can be accomplished by using the new bundled image, *MDM.SYS*, in the existing TK50/70 kit.

The command to boot MDM from a TF85 drive on the SHAC is as follows:

```
>>> BOOT/100 MIAn
2...
Bootfile:  MDM.SYS
```

where *n* is the TF85 controller port number.

2.3 DSL$CREATE_DEVICE Modifications

MDM no longer provides device objects for devices that do not require a Q-bus interrupt vector. You specify the base address of the interrupt vectors when you build the MDM system. Refer to the *MicroVAX Diagnostic Monitor Programmer's Guide*, section 6.1.4.

CAUTION: *Diagnostics of devices for which there exists no corresponding Q-bus interrupt vector may no longer call the DSL$ procedures listed below.*

- DSL$CREATE_DEVICE

  Diagnostics of devices for which there exists no corresponding Q-bus interrupt vector cannot successfully make this call. If they do, MDM returns the DSL$INVALID_CONTEXT status.

  However, a memory diagnostic can successfully call DSL$CREATE_DEVICE, because the memory diagnostic performs all testing by means of the Q-bus and memory mapping.

- DSL$ALLOCATE_MAP

  If the tested device has no corresponding Q-bus interrupt vector, the diagnostic cannot successfully make this call. MDM returns the DSL$BAD_VALUE status.

- DSL$FREE_MAP

If the tested device has no corresponding Q-bus interrupt vector, the diagnostic cannot successfully make this call. MDM returns the DSL$BAD_VALUE status.

- DSL$UNIBUS_MAP

  If the tested device has no corresponding Q-bus interrupt vector, the diagnostic cannot successfully make this call. MDM returns the DSL$BAD_VALUE status.

- DSL$UNIBUS_UNMAP

  If the tested device has no corresponding Q-bus interrupt vector, the diagnostic cannot successfully make this call. MDM returns the DSL$BAD_VALUE status.

- DSL$ALLOCATE_BUFFER

  If the tested device has no corresponding Q-bus interrupt vector, the diagnostic cannot successfully make this call. MDM returns the DSL$BAD_VALUE status.

- DSL$DEALLOCATE_BUFFER

  If the tested device has no corresponding Q-bus interrupt vector, the diagnostic cannot successfully make this call. MDM returns the DSL$BAD_VALUE status.

2.4 DSL$DELETE_DEVICE Modifications

If you have called DSL$CREATE_DEVICE more than once, you need only call DSL$DELETE_DEVICE once to delete all device objects. If you invoke DSL$DELETE_DEVICE again and no other device objects have been created, MDM returns the DSL$BAD_VALUE status.

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Chapter 3
Problems and Corrections

This chapter discusses monitor and diagnostic problems.

3.1 Monitor Problems

Monitor problems are divided into four categories:

- Menu problems
- Command Line Mode problems
- Development problems
- Miscellaneous problems

There are no menu problems for this release.

3.1.1 Command Line Mode Problems

The following sections describe Command Line Mode problems.

3.1.1.1 UNITS ENABLE and DISABLE Do Not Work If Unit Number Is Greater Than 15

The UNITS command in MDM allows you to ENABLE or DISABLE individual device units. Devices have unit numbers anywhere from 0 to 1024. However, if you enter the UNITS ENABLE or the UNITS DISABLE command with a unit number greater than 15, the following message is displayed:

```
Invalid unit number, Unit number range 0-15
```

You have no way to disable or enable any units declared by any devices if the unit numbers are greater than 15.

3.1.2 Development Problems

The following describes a development problem.

3.1.2.1 IOADDRES Raises an Exception When EDEBUG Is Turned ON

If you boot MDM, configure a diagnostic, and run the IOADDRES utility with EDEBUG, IOADDRES raises an exception with the following message:

```
%KERNEL-F-NO_ACCESS, no access to parameter
```

3.1.3 Miscellaneous Problems

The following sections describe miscellaneous problems.

3.1.3.1 MDM Documentation

3.1.3.1.1 TK70 Controller Can Boot Only from Unit Number 0

When you boot MDM from a second TK70 controller, a unit number other than 0 causes a failure. MDM displays the following error message:

```
Ctrl Err
```

This information was omitted from the last edition of the *MDM User's Guide*.

3.1.3.1.2 Year on Date Resets to 1988 After a Reboot on CVAX Processors

When you boot MDM and enter the correct date, the *YEAR* portion of the date reverts to *1988* if you reboot the system. However, if you do not reboot the system, the date (including the year) remains as set.

This information was omitted from the last edition of the *MDM User's Guide*.

3.1.3.1.3 MDM$MAINT Logical Definition

The definition of the MDM$MAINT logical on page 2-10 of the *MicroVAX Diagnostic Ethernet Server User's Guide* is erroneously given as:

```
DEFINE/SYSTEM ddun:[MDMMAINT] MDM$MAINT
```

The correct definition is as follows:

```
DEFINE/SYSTEM MDM$MAINT ddun:[MDMMAINT]
```

where *ddun* is the name of the host system disk.

3.1.3.2 Unsupported Devices

Unsupported devices can display detailed messages from within tests; the detail message flag cannot be turned off for these devices.

3.1.3.3 RF Boot Off DSSI Hangs After Reset Config/Config Commands Issued

MDM can boot the hard-disk kits from the DSSI port of the MicroVAX 3300 /3400. The monitor boots (MDMDIA.SYS image) and loads the diagnostics correctly on the initial load. However, when you perform a Reset Configure (through either the CLM Reset Configure command, or the Menu Mode menu 5.4 - Activate Menu) and then perform a Configure, the monitor displays the following message and hangs:

```
The system is preparing for testing.

This may take several minutes.
Please wait...
```

You should reboot the system for testing to continue.

3.2 Diagnostic Problems

The following sections describe diagnostic problems.

3.2.1 DSSI—Verify Test 4 Fails When the Drive Is Off Line

When you run the verify test 4 of the DSSI diagnostic with the drive off line, the test fails. The verify tests are supposed to run whether or not a drive is attached and on line. This is only a READ test, but still needs the DUP code to run, which does not happen if the drive is off line.

3.2.2 MIRA—Out of Range Input Causes Wait

When running utility tests 3, 4, or 5 on the MIRA, you see general SETUP messages and then are prompted to enter a 1 or 2 and press RETURN, corresponding to the particular mode (maintenance or installation) that you are in.

If you enter an out-of-range number (either 0 or greater than 2), the cursor drops to the beginning of the next line and waits. To continue the test, enter a 1 or 2 and press RETURN. The test continues according to which value you entered.

3.2.3 RC25—nakdal—Functional Tests Can Give Fatal Bugcheck

When running the functional tests with pass set to 0 on the KDA50 diagnostic running on the RC25 with the KA650, the following fatal bugcheck occurs:

```
** Fatal Bugcheck, uVDOS V3.0. UNXINTEXC, unexpected interrupt
                                                    or exception

Job 000300D2, Program: nakda

  R0      ...     R4        R5      R6        R7
00000001 ...  00000005 00000001 00000000 00000005
7fffffff ...  000011ea 7ffffd18 80055bf0 80004e04
  R8      ...     AP        FP        SP        PC

KERNEL/INTERRUPT STACK

   80055BF4 04170000
 80055BF8 000096D4
 80055BFC 000000A0

System shutdown complete - use console to halt system
```

This occurs on different pass numbers ranging from 1 to 137; however it usually occurs after running test 1.

3.2.4 DTQNA/nazqaa—Cumulative Pass Count as Printed Is Confusing

A progress message printed during the running of exerciser and functional tests gives the total count of the number of passes of all tests run. This count is incremented each time the diagnostic runs any test and the message is printed after every 10 passes. When the monitor prints out the following messages, a user could be confused as to exactly how many passes were executed. The following is an example:

```
pass 1 test 1 started
pass 2 test 1 started
the test has run 10 passes
```

3.2.5 DZV11/nadzaf—Fails Exerciser Test 1 with DTQNA in Config

A bus timing problem occurs with the DZV11/DZQ11/DTQNA configured in a system. The failure happens with the DZV11 as the second DZA device. This failure only occurs after the initial boot, not after a reset config or config. The failure has also been observed when the DZV11 is the first DZA device in the configuration, but the frequency of occurrence is less.

The failure has been observed when the bus is set up as follows:

```
nakaa   160000  000
namta   160000  000
narxa   172150  154
natka   174500  260
nadza   160100  300     dzq11
nadza   160110  310     dzv11
nadha   160500  320
nazqa   172570  330     dtqna
naxqa   174440  120
```

3.2.6 ADV11D–A—Gets Fatal Bugcheck with Utility Tests 5 and 6

When testing the utilities for the ADV11–DA, tests 5 and 6 are looking for a CSR of a second device. Because the device is not a part of this setup, "CTRL/C" is typed and then the HALT command is used to exit the test. The system responds with the following message and then crashes:

```
Fatal bugcheck, VAXELN V4.0 FATLMEMERR, unrecoverable memory error
Current Job = 000300c2
Program Name = NAADA

Test 5 of the utility is "D/A-A/D loopback test"
Test 6 of the utility is "Real time clock start test"
```

3.2.7 KDA—Fatal Bugcheck During Config if Nonexistent CSR Used

When you use a KA650 CPU with no KDA board, specify a nonexistent CSR address for a KDA. Then, perform a configure of the system. The KDA diagnostic should see if a device is at the specified address. The KDA will disable itself when there is no response. This is what happens with a MicroVAX CPU.

However, this action produces a fatal bugcheck if the CPU is a KA650 or with a TK50. The following detail messages are produced:

```
***** Fatal Bugcheck, VAXELN V4.0 FATLMEMERR, unrecoverable
      memory error

        current job = 000300c2

        Program Name= NAKDA


Press return to view remainder of bugcheck info.....

        Register Dump
```

```
                R0 = 8018ac78
                        .
                        .
                        .
                PSL=041d0008

        Kernel/Interrupt Stack

                800747f8../....


system shutdown complete
```

3.2.8 LANCE—Diagnostic Does Not Include Device Name in Setup

The LANCE diagnostic does not include the device name within its SETUP message.

3.2.9 NALAA—LPS40 Fails Utility Test 2

The NALAA diagnostic utility test 2 "Print Engine Emulator Test" fails if the device is not connected. Utility test 2 neither tells the operator that it has failed nor gives the operator an opportunity to connect the emulator test device.

3.2.10 NALAA—LPS40 Fails Utility Test 4

The NALAA diagnostic utility test 4 "Print Engine Emulator Test" fails. The diagnostic does not advise the operator that the test is for a DUPLEX Printer Only.

3.2.11 CXF32—Fails Utility Test 1 with KA650 CPU

The diagnostic fails utility test 1, "Staged loopback test," with all ports looped back or with just one port looped back when run under the KA650 CPU. This error occurs regardless of which half of the board is being tested. A typical example follows:

```
There were 17 data errors in 10 cycles.
Interrupt failure occurred while transmitting on line 8.
DHCX0A - Error number 30
Error during port interrupt test.
```

3.2.12 TSV05—Diagnostic Reports a Unit Even None is Present

When a system is configured with a TSV05 controller but without an attached drive, the diagnostic reports the following:

```
TSV05 Magtape Controller
    TSV05 - Unit #  0, Tape Drive Offline
```

3.2.13 VS550—Diagnostic Fails When Exercised with the TK70

When the VS550 and the TK70 diagnostics are exercised together, the VS550 fails during exerciser test 2 with the following error:

```
VS550 - Error Number 12
there were errors during the test
M7651 is the FRU
```

This error occurs when exercising the whole system or when just exercising the TK70 and VS550 together.

3.2.14 RQDX—Diagnostic Fails Verify Test 3 If There Is No Floppy in RX50 Drive

The RQDX diagnostic fails verify test 3 if the RX50 drive contains no floppy disk or is off line. This could be a problem if the user is running Main Menu 1 or 6 because all they would see is a "not-so-helpful" error message. The user is then directed to "contact field service." A message that suggests a corrective action would have been more appropriate.

3.2.15 DSIA—Diagnostic Prints Nonstandard "CR" Message When Prompting User

When running utility test 2 of the DSIA diagnostic, you see the following message:

```
You may type "exit" to exit from this utility
or "CR" to display the local program directory.
```

The message should read as follows:

```
You may type "exit" to exit from this utility or
press <RETURN> to display the local program directory.
```

3.2.16 KDA50—Diagnostic Errors When Run for Extended Period on rtVAX System

When you run utilities on an rtVAX system over an extended period of time (about 24 hours) with the following configuration: CPU, memory, RQDX3, TK70, DHV11, DHQ11, DZV11, RC25, KDA50 (RA82), DPV11, DZQ11, and KWV11–C, an intermittent failure is reported. The error reported is:

```
KDA50QA - Error Number 21
Controller detected internal error.
M7164 controller processor module.
```

3.2.17 DH–CX0A—Diagnostic Produces Errors During Extended Run on VAX 4000

During testing of a VAX 4000 system in the following configuration: KA670, 32M memory, EZA, PDIA, PDIB, TK70, DEQNA, CXY08, CXA16, CXB16, DSV11, and DRQ3B, tests 230 and 370 of the DH–CX0A diagnostic fail after an extended run. DH–CX0A is the CXY08 module. The error message reported is as follows:

```
1. DH-CX0A - Error Number 230     12-May-1990 22:04:22:45
   DMA did not resume after ABORT
   DH/CX controller module

2. DH-CX0A - Error number 370     13-May-1990 17:49:28:90
   TX.ENA not set/reset during outgoing flow-control test.
   DH/CX controller module
```

The system was running in Service/Exerciser mode with pass count set to 0. The test was started on 11–May–1990 08:00.

3.2.18 CXA16—Diagnostic Utility Test 1 Fails with E34 Switch 1 Off on VAX 4000

The CXA16, a communication device, fails utility test 1 when switch 1 of E34 is set off on a VAX 4000 in the following configuration: KA670, 32M memory, PDIA (SHAC), PDIB, TK70, DESQA, CXY08, CXA16, CXB16, DSV11, and DRQ3B. The following error message is reported:

```
Testing...
There were 151 data errors in 10 cycles.
DH-CX0C - Error number 30
Error during port interrupt test.
```

3.2.19 DRQ3B—RF Drives Go Off Line When Run with DRQ3B on VAX 4000

When MDM is set to run in Service mode, Exerciser section, and Pass=0 on a VAX 4000 in a configuration that includes the SHAC and the DRQ3B with no other devices enabled, the RF drive goes off line within 10 minutes. This problem does not occur if other devices are run without the DRQ3B. The following error message is reported during the test:

```
PDIA - Error Number 196611
MSCP command timed out.
FRU: DSSI Port: 0

PDIA - Error Number 65541
Drive was not online.
FRU: DSSI Port: 0

PDIA - Error Number 65540
MSCP connection could not be opened.
FRU: DSSI Port: 0

PDIA - Error Number 65544
Drive was not online.
FRU: DSSI Port: 0
```

A workaround is to run the DRQ3B and the SHAC separately.

3.2.20 RQX05—Diagnostic Fails Intermittently in Service/Exerciser Mode on MicroVAX II

An intermittent failure occurs when running the RQX05 diagnostic in the Service/Exerciser mode on MicroVAX II. This stops all further testing of the device. The following error message is reported:

```
RQX05A - Error Number 415
Read sector failure at errchk compliment
The drive unit is the FRU
```

3.2.21 NAKAA—Diagnostic Identifies DECsystem 5400 CPU as a MicroVAX 3500/3600 CPU

When you configure the DECsystem 5400 and issue a *SHOW CONFIGURE* command, the diagnostic identifies the CPU as a MicroVAX 3500/3600 CPU. All other information pertinent to the DECsystem 5400 is correct and you can perform normal testing on the system.

3.2.22 NAQBA on VAX 4000 Model 200: Diagnostic Hangs System When Running with NAKZA Diagnostic and Ctrl/C>>Halt Is Issued

When you run a system with the configuration listed below in Service /Exerciser mode for some time specifying PASS = 0 and then enter a Ctrl/C>>Halt, the system hangs.

KA660 CPU
SGEC
SHAC
MS650 (16-megabytes)
DRQ3B
KZQSA/TLZ04

Run the DRQ3B and the KZQSA separately to avoid this problem.

3.2.23 NASCAB—Diagnostic Errors When Run with RRD40 and RRD42 on DECsystem 5500

When exercising the SCSI diagnostic by itself for an extended period of time with the RRD40 and/or the RRD42 on it, the drives fail and produce an error. The drives also fail if run separately. This failure is also seen if the NASCAB diagnostic is exercised with the rest of the system. It appears that once a device fails, it is no longer tested during that particular test run. The following error message is reported:

```
SCSA - Error Number 6007      27-FEB-1988 08:31:50.15
FAILURE : Verify Mode Exerciser failed - Device ID 04.
    FRU : Device at SCSI ID mention above.

SCSA - Error Number 6007      27-FEB-1988 02:33:55.23
FAILURE : Verify Mode Exerciser failed - Device ID 06.
    FRU : Device at SCSI ID mention above.
```

3.2.24 NAKFAI—KFQSA/TF85 Diagnostic Fails Functional and Exerciser Tests with the TF85 on KA655 CPU

The NAKFAI diagnostic fails when exercising the KFQSA/TF85 by itself on selecting Utility test 5, subtest 4 (TMSCP Exerciser - user more repositions enabled). The following error is reported:

```
KFQSAC - Error Number 320000016       3-JAN-1988 05:23:52.53
Record data truncated
The DSSI device is the FRU.
```

3.2.25 NATSAL—TSV05 Diagnostic Fails Service/Exerciser Test 4 on KA660 CPU

The TSV05 fails when exercised in a large system over a period of time. The devices in the system include:

CPUA Enabled KA660-AA MC=06 FW=3.7
MEMA Enabled 16 Megabytes. 32768 Pages
PDIA Enabled SHAC Ver. 3.6
LPV11A Enabled
TSV05A Enabled
TKXXA Enabled TQK70-REV MC=3
DEQNAA Enabled DELQA/DESQA L 08-00-2B-0A-6A-70
DFA01A Enabled Modem A: US 1.00 B: US 1.00
DMV11A Enabled
IEQ11A Enabled REV SW=A
VCB02A Disabled
KZQSAA Enabled KZQSA
KXJ11A Disabled

The TSV05 fails during Service/Exerciser test 4 after about 20-30 passes with PASS = 0. One of the following error messages is reported:

```
TSV05A - Error Number 2999      22-JUN-1988 13:25:07.67
Unknown source of error generation.
TSV05 Controller

TSV05A - Error Number 309      22-JUN-1988 12:55:15.48
FATAL EXIT: Unrecoverable Error - Tape Position Lost
TSV05 Drive
```

The workaround is to disable the VCB02 and do not run more than six devices at a time.

3.2.26 NASHAD/TF85—SHAC/TF85 Diagnostic Sometimes Does Not See the TF85 During First Configure on VAX 4000 Model 200 and VAX 4000 Model 300

When the system is configured, the diagnostic does not sometimes see the TF85. It sees the RF71 on the SHAC but not the TF85 when first configured. However, it recognizes both the RF71 and TF85 if the system is configured a second time. This does not happen all the time.

The workaround is to configure the system a second time.

3.2.27 NASHAD/TF85—SHAC/TF85 Diagnostic Causes DUP Fatal Error with TF85 on VAX 4000 Model 300

If you select the DSSI diagnostic and issue the following sequence of commands:

```
MDM>>set test 2
MDM>>set sec Exerciser
MDM>>set mode service
MDM>>set pass 0
MDM>>start
```

After about one minute, if you issue Ctrl/C>>Halt, set section Functional, set test 2, and start testing, the following error message is produced:

```
PDIA - Error Number 327685   11-JUL-1988 16:07:48.23
DUP Fatal Error Message
FRU: DSSI Port: 0
```

You will get the same result if you first run Service/Functional Test 3, issue Ctrl/C>>Halt, and run Service/Functional Test 2.

The workaround is to let the test run to completion by not issuing Ctrl/C>>Halt.

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